GOVERNMENT OF INDIA
MINISTRY OF COMMERCE

REPORT OF THE
INDIAN TARIFF BOARD
ON THE
ALUMINIUM INDUSTRY

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1947

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REPORT ON THE ALUMINIUM INDUSTRY

Reference to the Board.

1. This Board was set up by the Government of India, Department of Commerce, in their Resolution No. 218-T(55)|45, dated the 3rd November 1945 (Appendix I), for the purpose of investigating claims from industries which were started or developed in wartime, or the starting of which was considered essential by Government under conditions created by the war, to assistance or protection during the transition period, pending the establishment of a permanent machinery to give effect to their long-term tariff policy in post-war period. The aluminium industry, being one of the industries to which, early in 1940, Government had extended an assurance of protection with a view to encouraging its establishment, was mentioned in the above Resolution, but the case of the industry was not referred to the Board as the matter was still under consideration. In the subsequent Resolution No. 218-T(55)|45, dated the 16th February 1946 (Appendix II), the case of the industry was referred to the Board for investigation and report.

Scope of inquiry.

2. The Board was requested to report whether the industry satisfies the following conditions :—

(1) that it is established and conducted on sound business lines ; and

(2) (*a*) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance ; or

(*b*) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive. Where a claim to protection or assistance is found to be established, i.e., if condition (1) and condition (2) (*a*) or (*b*) are satisfied, the Board will recommend—

(i) whether, at what rate and in respect of what articles or class or description of articles, a protective duty should be imposed ;

(*ii*) what additional or alternative measures should be taken to protect or assist the industry ; and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations, the Board is required to give weight to the interests of the consumers in the light of the prevailing conditions and also to consider how its recommendations would affect industries using the articles in respect of which protection may be granted.

In our report on calcium chloride, we have drawn a comparison between the terms of reference of this Board and of previous Tariff Boards. For the purpose of this report, it is sufficient to point out that the conditions which an industry must fulfil in order to qualify for protection or assistance are now less stringent in view of the desirability of a liberal protective policy to speed up industrialisation, the rapid progress of which is one of the declared objectives of Government's policy. As action to be taken now is only part of a short-range policy, the broad criterion adopted is that, unless an industry started during wartime suffers from some inherent economic handicaps, there is a *prima facie* case for helping the industry until a fuller and more detailed examination can be undertaken at a later stage under more normal conditions and as part of a long-term policy of industrial development. The period for which protection or assistance may be recommended by the Board may not exceed three years.

Method of inquiry.

3. On the 19th February 1946, we issued a press communiqué inviting associations, firms or persons including producers, importers and consumers directly interested in this industry or depending upon it for their raw materials, who wished their views to be considered by the Board, to submit their representations supported by facts and figures regarding, *inter alia*,

(1) domestic demand for the commodity
(2) volume and cost of imports ;
(3) cost of production ;
(4) general financial position of the producers ; and
(5) the exact nature of protection or assistance applied for.

We also issued separate questionnaires for producers, importers and consumers. Provincial Governments and Administrations were requested to give their views in regard to the claim of the aluminium industry for protection or assistance. As production commenced during wartime, under direct encouragment from the Supply Department, the Department of Industries and Supplies was requested to furnish the Board with such information in regard to the present state of the development of the industry and its future prospects as might be available with it and might be of use to the Board in the investigation. The Board visited the works of the two concerns producing aluminium, viz., the Indian Aluminium Company which has its smelter at Alwaye in the Travancore State and its rolling mills in Calcutta, and the Aluminium Corporation of India, Ltd., which has the alumina plant and smelter and a small rolling mill together at its works near Asansolin Bengal. The Board did not pay a visit to the alumina works of the Indian Aluminium Company which are still under erection at Muri near Ranchi in Bihar. The President of the Board accompanied by Mr. Desai also paid a visit to the hollow-ware factory (the Crown Aluminium Works, Belur) of Messrs. Jeewanlal (1929), Ltd., at Calcutta, this company being the largest producer of aluminium utensils and therefore the largest consumer of the virgin metal.

Oral evidence of representatives of producers, consumers and importers was taken at Ootacamund on the 9th, 10th and 11th May 1946. A list of persons and firms which submitted written representations will be found in Appendix III, while Appendix IV gives the list of witnesses examined by the Board.

History of the industry.

4. (i) ***Early history.***—The possibility of starting an aluminium industry in India was being considered from time to time by scientists as well as industrialists since 1900, when a company called the Indian Aluminium Company, which had nothing to do with the present Indian Aluminium Company was formed. The activities of this company were confined to the aluminium hollow-ware industry, but even so it did not make much progress, and soon went out of existence. Foreign interests made various investigations into the possibility of production of aluminium in conjunction with hydro-electric schemes, but no project materialised. In 1936, Dr. M. S. Patel, then Industrial Chemist in the Department of Industries, Bombay, wrote a bulletin on the "Possibility of Production of Aluminium in Bombay," which attracted some considerable notice. The bulletin surveys in brief the prospects of establishment of an aluminium industry in India in the context of world production of this metal. The Indian aluminium industry as it exists to-day was conceived in the years immediately preceding the war but did not start production until well after the beginning of the war. Thus, of the two producers, the Aluminium Corporation was the first to be registered on the 6th October 1937, while the other, the Indian Aluminium Company, was registered in December 1938 as the Aluminium Production Company of India ; both companies are registered in Calcutta.

(ii) *Aluminium Corporation.*—The first positive step in the direction of development of the aluminium industry in the country was the formation of the Aluminium Corporation of India, Limited, followed shortly afterwards by the formation of the Indian Aluminium Company (then Aluminium Production Company of India), which are now the only two producers of aluminium in the country. The Aluminium Corporation has all its works at Jaykaynagar near Asansol in Bengal in the vicinity of its own coal mines. It has its own bauxite deposits at a distance of about 170 miles from the works, generates its own electricity from coal at the site of the works, and has all the manufacturing plant concentrated in one place. The works thus include an alumina plant, a smelter, a small rolling mill and a power-house, all in the same premises. The Corporation uses Indian bauxite, and is thus the first producer of aluminium from the indigenous raw material. The bulk of the machinery of the Aluminium Corporation was supplied by the Czechoslovakian firm of Skodas, but the entire equipment had not arrived when the war broke out and further supply was interrupted. The Corporation had to approach Government for facilities and priorities for the import of the remaining machinery, and it was not until July 1944 that the production of virgin aluminium was achieved and the first ingot was produced by the Corporation.

(iii) *Indian Aluminium Company.*—The Indian Aluminium Company (then the Aluminium Production Company of India) started as a purely foreign concern, the capital being provided equally by Canadian and British aluminium interests. Even now, two-thirds of the share capital is held by Canadian and British aluminium interests, one-third having been thrown open for subscription by holders in India as recently as 1945, when it took its present name. The Managing Director is appointed by the Aluminium Company of Canada. The plant and equipment installed by the Indian Aluminium Company are of British and Canadian manufacture. The Indian Aluminium Company started with rolling mills, which were under construction at the outbreak of the war, and later put up the smelter at Alwaye in the Travancore State with the active assistance of Government. The alumina works are now under construction at Muri (Bihar) and are expected to commence production early in January 1947. The rolling mills of the Indian Aluminium Company started production in August 1941 and the smelter in March 1943. The widely separated location of the three main component units of the works of the Indian Aluminium Company requires a word of explanation. The rolling mills were the first to be erected and were located at Calcutta, which is the main centre of the hollow-ware industry and which is the largest consumer of sheets and circles. The smelter, which was the next to be put up, had to be located at a place where cheap and ample electric power was available. Alwaye was the only place where such power was available at the time from the Pallivasal hydro-electric scheme of Travancore, and was thus selected as the site for the reduction works. The alumina works are being erected at Muri in Bihar on account of the availability of the principal raw material, *viz.*, bauxite and coal. So far as the future is concerned, the alumina works must remain at Muri and the reduction works at Alwaye, but we think that rationalization will be promoted by having a rolling mill in the south as near Alwaye as possible, for the south is also now becoming a large consumer of aluminium utensils.

(iv) *Assistance by Government.*—Shortly after the outbreak of the war, it became apparent to Government that the fullest advantage must be taken of the possibility of production of aluminium in India. Several conferences were held between the representatives of the two concerns and officers of the Departments of Supply and Commerce of the Central Government with a view to importing the remaining machinery and commencing production by the earliest possible date. Apart from facilities for procurement of machinery, the assistance extended by Government took the following forms :—

(*a*) In 1940, Government decided to allow alumina to be imported free of duty to enable the manufacture of aluminium to be started by the Indian Aluminium Company. The duty has been re-imposed at 36 per cent. *ad valorem* since July 1944 on the ground that alumina was being produced by the sister concern, and was available to the Indian Aluminium Company if it should choose to take advantage of the home product.

(*b*) Cryolite, one of the essential raw materials, which has to be imported, is allowed free of duty by Government.

(*c*) Government gave priorities to both the concerns for the supply of structural steel for the construction of factory buildings as well as for the supply of machine tools for maintenance.

(*d*) Government deputed an officer of the organization of the Electrical Commissioner to the Government of India to advise and assist the Corporation during the installation of its boiler-house and power plant.

(*e*) Government brought out experts from Canada to help the Corporation to get its alumina plant running properly and efficiently.

Government's assurance of protection to the industry.

5. Apart from the assistance referred to in the preceding paragraph, the Central Government gave a formal assurance of protection to the industry, *vide* Commerce Department Resolution No. 6-T (2)|40, dated the 14th December 1940, the terms of which are reproduced below :—

> "In this Department Resolution No. 6-T|Sim|40, dated the 20th July 1940, the Government of India announced their decision to permit the importation of alumina free of duty in order to enable the manufacture of aluminium to be started in India. The concession is to remain in force for four years or until adequate supplies of alumina made in India are available at a reasonable price, whichever may be earlier.
>
> In view of the fact that the production of aluminium in this country is an urgent war necessity, the Government of India are further pleased to give an assurance to all who wish to undertake its manufacture in India that, provided their affairs are conducted on sound business lines, they will be given such measure of protection against unfair competition from outside India after the war, as may be necessary to enable them to continue their existence."

It was on the strength of this assurance that application for protection was first made by the Aluminium Corporation. The application for protection was later joined in by the Indian Aluminium Company. The case for protection is also supported by certain other aluminium concerns, such as the Aluminium Industries, Limited, of Trivandrum ; Messrs. Venesta, Limited, of Calcutta ; and Messrs. H. Carberry, Limited, of Calcutta, urging specially that any duty that may be levied on virgin aluminium should be neutralised by the duty that should be levied on articles manufactured by them. The Aluminium Industries, Limited, of Trivandrum are interested in the manufacture of steel cored aluminium cables. Messrs. Venesta, Limited, are interested in the manufacture of aluminium foil for tea chest lining ; and Messrs. H. Carberry, Limited, of Calcutta are interested in the manufacture of aluminium powder for the paint industry.

Industry's case for protection.

6. The two producers of aluminium submitted separate representations for the grant of protection and assistance to the industry. Their claims and requests are, however, similar and the industry's case for protection can be summarised as under. India is rich in bauxite, which is the principal raw material required for the production of the metal. The quality of the Indian bauxite is also reported to be above the average. The demand for the metal, though at present limited, is rising rapidly, and there is no reason why the country should not be self-sufficient in regard to its requirements of aluminium. The only limiting factor is cheap power, but it should be possible to get over this difficulty with the development of hydro-electric schemes, a number of which are now under active consideration as part of the post-war reconstruction and development programmes. The country has thus the raw material, is likely to have the necessary cheap power, can mobilise all the capital required for the establishment of the industry, and has a home market for the finished products. The industry will, however,

have to face fierce competition from established industries in other countries, powerful cartels having been a special feature of this industry for many years. The stake involved is so large that the industry cannot succeed without definite assistance from the State. In this connection, the representation submitted by the Aluminium Corporation refers to the steps said to have been taken in Japan to build up its aluminium industry just before the war by a system of (1) remission of taxes on profits, (2) bonuses on production, and (3) drawback of customs duty on the raw materials used. Although so far aluminium has been used in India mainly for domestic requirements, such as cooking utensils, it is likely to be used to an increasing extent in engineering and other industries, and it is essential, therefore, that the price of the metal should be kept at the lowest possible level. Until the cost of production goes down to the desired extent, protection should be afforded to the industry by means of subsidies, which would enable the home producers to sell their output in competition with the imports. Another form of assistance suggested by the industry is concession in internal railway freights. It is urged that, in this industry, for one ton of ingot produced, nine ton-miles of raw materials and semi-manufactured goods have to be moved, making railway freight an appreciable factor in the total cost of production. This difficulty is especially applicable to the Indian Aluminium Company, which has its three main component units of production in widely separated areas. It was emphasised by Mr. Kenneth Hall, on behalf of the Indian Aluminium Company, that railway freights on raw materials and semi-manufactured goods concerned in the production of aluminium in India were considerably higher than in Canada and that, if relief could be given in this matter, some saving in the cost of production could be achieved, thereby mitigating the handicap of the Indian producer. He gave the following comparative figures :—

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Commodity.	Freight in pies per ton mile	
	India.	Canada.
Aluminium ingot	11·0	2·9
Aluminium sheets and circles	5·5	3·5
Bauxite	1·0	9·3
Alumina	1·0	4·0
Petroleum coke	4·0	2·9
Pitch	9·0	4·6

In addition it was also brought to the notice of the Board that the port charges, especially in Cochin, were unduly high and weigh heavily on the cost of production of the metal.

It was not possible for the Board to go into this question in any detail, particularly as railway freights fall within the jurisdiction of the Railway Rates Advisory Committee. The Board considers it necessary, however, to draw the attention of Government to this point in order that it may be examined by the appropriate authority and any factor which may retard the attainment of the objectives of low costs of production of aluminium ingot and expansion of production of aluminium in the country may be eliminated. Mr. Hall went to the length of saying that, if the Indian producer is placed on a basis of parity with the Canadian producer in respect of railway freights, the Indian producer, at least the Indian Aluminium Company, should have no difficulty in producing aluminium at a cost comparable with that of the Canadian producer who is the cheapest producer of aluminium in the world. The Indian industry has grown up under the shelter of the wartime pooling arrangement; to which a detailed reference will be made later in the report, and wartime import control ; and the continuance of these measures is suggested by the industry until it is firmly established. It is added that, in course of time, it should be possible for the home industry to lower its cost to such an extent that it will be able to stand competition with foreign imports, and that the protection desired is thus only for an initial period. The length of this period is, however, difficult to forecast at present with any degree of accuracy. In any case, as was demonstrated during the last world war, aluminium is a vital metal in the defence of the country, and its production must be protected in the national interest. In these days, air power is the first line of defence of a country, and no country can depend upon its air power unless it possesses a self-sufficient aircraft industry. Aluminium is the chief raw material in an aircraft industry. While protecting the production of virgin aluminium, care should be taken to see that the Indian rolling industry is not only not affected but is actually fostered so as to meet the total requirements of the country, and that the other subsidiary industries such as the manufacture of foils, production of transmission cables and manufacture of powder, are encouraged by a proper adjustment of duty between the virgin metal on the one hand and semi-manufactured or finished goods on the other. On the whole, the rolling industry which is fairly well established, and the hollow-ware industry which is not afraid of competition from abroad, are opposed to an increase in duty on aluminium ingot, lest the cost of sheets, circles and utensils should rise and imports of such articles be encouraged to the detriment of their own interests. These sections of the industry, however, appreciate the need for protecting the ingot industry, the sound establishment of which is to their eventual benefit, and all that they now ask for is that the duty be adjusted so as to safeguard their production while keeping the price of aluminium to the ultimate consumer as low as possible. The Board has kept these several interests of the different branches of the aluminium industry in view, while examining the case and formulating its proposals for the protection of the industry.

Process of manufacture.

7. The production of aluminium is divided into two main stages. The first stage involves the production of alumina or aluminium oxide from bauxite which is the basic ore of aluminium. The second stage involves the electrolysis of alumina in a liquid bath of cryolite and other salts.

Production of alumina.—The most widely used process for the production of alumina is known as the Bayer process. In this, bauxite is calcined in a rotary kiln and then ground in a ball mill. Next it is mixed with a strong solution of caustic soda and digested under pressure in steam jacketted autoclaves. This converts aluminium oxide into sodium aluminate. The latter is filtered to remove impurities and aluminium hydroxide is precipitated by further treatment. The precipitated aluminium hydroxide is dried and calcined in a reverberatory furname to produce alumina.

Production of aluminium ingot.—This operation is carried out in large electrolytic cells which consist of steel shells lined with carbon blocks forming an inner cavity in which the molten cryolite and alumina are held. The carbon anodes, called Soderberg anodes, dipping into the are held. The carbon anodes, called Soderberg anodes, dipping into the bath liquid and separates the metallic aluminium electrolytically. Molten aluminium deposits at the bottom of the cell and is withdrawn from time to time into a ladle and cast into ingots. This is the primary aluminium of commerce and generally runs in purity up to about 99.8 per cent. depending upon the care and skill of operation as well as upon the purity of the raw materials used, especially alumina and Soderberg electrodes.

The carbon lining of the electrolytic cell known as pot-lining requires removal after a run of about 400|450 days. The life of the lining depends on the nature of lining material and the skill of operation.

Rolling.—The ingots produced at the reduction works are sent to a rolling mill where they are rolled into sheets and circles or to an aluminium factory where they are subjected to mechanical processes, such as forging, extrusion, drawing, spinning, etc.

Hollow-ware industry.—Sheets and circles produced at rolling mills are sent to utensil-making plants. In the general order of development of the industry in this country, utensil-making factories came first, then the rolling mills and, last, production of ingots. The hollow-ware or utensil-making industry is so well-established that it does not apprehend competition from abroad. The higher sea-freights on domestic utensils for Indian requirements make it impossible for an importer to undercut the Indian hollow-ware producer.

Raw materials.

8. The principal raw materials required for the production of aluminium are—

(1) *Bauxite*, mainly aluminium oxide, the principal ore of aluminium, occurs in abundance in India. Four tons of bauxite are required to produce two tons of alumina from which one ton of aluminium is produced.

(2) *Caustic soda* is used for purifying bauxite and converting it into alumina. 0.08 to 0.10 ton of caustic soda is required per ton of alumina, or 0.16 to 0.20 ton of caustic soda per ton of aluminium.

(3) *Cryolite* is the chief constituent of the electrolytic bath and is used to dissolve the alumina. The only natural source of cryolite is the deposits in Greenland. The high price of cryolite had led to the production of synthetic cryolite which is now generally used in the manufacture of aluminium in almost all countries. The synthetic material is, however, not, used in India, as it cannot be produced economically. 0.07 to 0.10 ton of this mineral is required per ton of aluminium ingot.

(4) *Aluminium fluoride* is used along with cryolite and helps in dissolving alumina in the bath. It is also an imported material. Per ton of aluminium ingot, 0.035 to 0.040 ton of fluoride is required.

(5) *Fluorspar* is also used along with cryolite and fluoride. Good quality of fluorspar is not available in India. 0.007 to 0.008 ton is required for a ton of aluminium.

(6) *Petroleum coke and pitch* are required for making "Soderberg paste" which is used for making electrodes and also for pot-lining. Both these materials are available in India. 0.75 ton of petroleum coke and 0.2 ton of pitch are required for 1 ton of aluminium ingot.

(7) *Fuel* (*coal, coke and|or furnace oil*) is required for raising steam and also for calcination of bauxite and alumina. 4 tons of coal and 0.5 ton of fuel oil are required for 1 ton of aluminium ingot.

(8) *Electrical energy.*—22,000 to 25,000 kilowatt hours are required per ton of aluminium.

Uses.

9. The uses of aluminium are many and are daily growing in number and importance. Everything from typewriter frames to aeroplanes and from utensils to furniture could be made of aluminium and its alloys. In general, it may be stated that aluminium can be used wherever low specific gravity, malleability, ductility, high thermal and electric conductivity and resistance to corrosion are required. Aluminium is used in the production of iron and steel as a deoxidising agent. The metal is replacing woodwork to a large extent in the building of railway carriages, motor cars, storage receptacles for liquids and various other purposes. Except for magnesium and beryllium, aluminium is the lightest among the structurally useful metals. The replacement of copper conductors in electrical transmission lines by aluminium cables is now regarded as an economic advantage in many cases, as volume for volume its electrical conductivity is about 61 per cent. that of copper and weight for weight its conductivity is about 200 per cent. that of copper. We were told that the Madras Government are actually preferring certain types of transmission cables made of aluminium to those made of copper. It may be emphasised that the field for aluminium alloys, both hard alloys and soft alloys, is unlimited. Aluminium is found to be economical in such processes as dyeing, printing, tanning, water purification and treatment of sewage. Aluminium is now replacing lead for purposes of wrapping and packing in the form of foil, e.g. in tea, cigarette, chocolate and other industries. It is being increasingly used in the paint industry in finely divided flake-like form either as powder or paste. Aluminium cans and containers are becoming common in the preserved fruit and food industry. Aluminium can be anodized and dyed, giving very attractive and striking decorative colours. Anodized aluminium is used as reflectors and said to possess resistance to corrosion and abrasion. In the field of domestic utensils, aluminium, owing to its lightness, is at least fifty per cent. cheaper than brass. Since aluminium resists the action of several chemicals and gases, it has found considerable use in the equipment needed in oil refineries, breweries, etc. So far as India is concerned, there should be even greater utilisation of aluminium than in other

countries owing to our relative poverty in the other non-ferrous metals like copper, tin, lead and zinc. It has even been suggested that aluminium should be used for replacing copper and nickel coins in view of our shortage in those metals. It is interesting to note that the Railway Board has recently constructed a third-class carriage mainly of aluminium as a model for post-war railways. A reference should be made in this connection to the recent announcement of the decision of Government to set up an aircraft industry in India, which will not be confined to the assembling of parts but manufacture all parts and make planes of wholly Indian origin. The aircraft industry should absorb a substantial quantity of aluminium when it is fully established. The description of uses of aluminium will not be complete without a mention of alloys of aluminium and magnesium which are commonly known as light alloys. Lightness, strength, resistance to corrosion and good appearance make these alloys particularly suitable for portable or semi-portable buildings, e.g. pre-fabricated houses, for semi-structural fittings in buildings and for machinery where movement is an essential factor. It is expected that aluminium will be the largest tonnage non-ferrous metal taking a long-range view. An estimate of the post-war uses of aluminium by industries in America, as given in the Engineering and Mining Journal, New York, February 1944, is as follows :—

Industry	*Percentage*
Transportation (land, air and water)	34
Cooking utensils	10
Electrical conductor	8
Machinery and electrical appliances	12
Building construction	9
Chemical industries	5
Foundry and metal working	9
Ferrous and non-ferrous metallurgy	4
Food industry and beverages	5
General miscellaneous	4
	100

Although the Indian conditions vary very differently from American conditions, the American estimate affords some guidance as to the possibility of utilisation of aluminium in future even in India, regard being had to Government's policy for rapid industrialisation. At present, we use aluminium mainly for cooking utensils, which industry was responsible at one time for practically the entire offtake of aluminium in India. Signs are evident, however, that aluminium will be used increasingly for other purposes, such as electrical transmission lines, foil for packing of tea and in air, rail and road transport.

The rapid increase in the use of aluminium is illustrated by the fact that, while the total production of aluminium was 7,300 tons in 1900, it rose to 680,000 tons in 1939, and now exceeds 3,000,000 tons. The production of no other non-ferrous metal has expanded anything like that of aluminium. It is for this reason that the present age is sometimes called the age of light metals, of which aluminium is by far the most important.

Domestic consumption.

10. To formulate a balanced plan for the protection of the Indian aluminium industry, it is necessary to form an estimate of annual consumption of the metal during the next three years as accurately as possible. The forecast must ordinarily have some relation to the annual consumption in the past ; but, in view of the recent developments of the uses of aluminium in structural and engineering industries, past consumption is not a safe guide in estimating the future demand. As mentioned in the preceding paragraph, aluminium was used in India mainly in the production of cooking utensils. That is the reason why, in the pre-war years, most of the imports were in the form of circles and sheets. For instance, the break-up of aluminium imports in 1929-30, the year of the largest import, was—

	Tons
Ingots	49
Circles	7,879
Sheets	197.2
Other manufactures	426.3
Total ..	8,551.5

A statement will be found in Appendix V showing imports of aluminium in ingots, sheets and circles, and local production so as to give an idea of the total quantity of aluminium available for home consumption. The figures for the years 1946 to 1949 in that statement are our estimates of the total requirements and of home production and therefore of possible imports. The figures of imports during the years immediately preceding the war hardly give an accurate idea of the Indian requirements even in the matter of cooking utensils. Before the great depression, imports of aluminium in all forms far exceeded the average imports in the three pre-war years 1936-37 to 1938-39, *viz.*, 3,020 tons, being 8,551 tons in 1929-30 and 6,329 tons in 1928-29. During the war years, there were very little imports of aluminium for civilian use and the entire production of the Indian factories was placed at the disposal of the Defence Services. The civil market has thus been starved for over six years, which fact has to be taken into consideration in estimating the possible requirements during the next three years, the period to which the Board's recommendations are to be related.

We have questioned producers, importers, consumers and experts, and, on the basis of the views expressed by them, we estimate the total Indian requirements of aluminium during the next three years to be 20,000 tons per annum distributed among the different categories as under :—

	Tons.	Percentage.
1. Utensils	15,000	75·00
2. Foil for tea chest lining	700	3·50
3. Powder for the paint industry	500	2·50
4. Castings	800	4·00
5. Engineering	2,000	10·00
6. Aluminium rods, aluminium conductors steel reinforced (ACSR)	1,000	5·00
	20,000	100·00

We were assured by the Managing Director of Messrs. Jeewanlal (1929), Ltd., who is specially well placed to advise on this point, that the country would find no difficulty in absorbing 20,000 tons of aluminium per annum in the cooking utensils industry alone the total requirements according to him being not less than 25,000 tons per annum. A new factory for the production of aluminium cables for electrical transmission lines is under construction near Trivandrum in the Tranvancore State and will easily consume 1,000 tons of aluminium rods per annum. Apparently there is great scope for these cables, but the new factory proposes to proceed cautiously as this is a new line in India. The foil industry will require 700 tons for tea packing only for the Indian tea industry. There is a possibility of export of aluminium foils to meet the requirements of the tea industries of Ceylon, Malaya, and the Dutch East Indies for which an additional quantity of 600 tons would be required. The representative of the foil industry indicated that lead was already being replaced by aluminium foil. There is only one factory producing aluminium powder and new machinery is being installed in that factory, but we were informed that Messrs. Jeewanlal (1929), Ltd., are also ordering out a plant for the manufacture of aluminium powder. These facts suggest that the estimate arrived at by the Board, though more than double the highest figure achieved in 1929-30 and nearly seven times the figure of annual consumption before 1939, is not unduly liberal, regard being had to the conditions likely to prevail during the next three years. It should also be added that we have not ignored the possible use of scrap and secondary metal of which fairly large quantities are likely to be available by way of post-war disposals.

Imports.

11. Before the war, there was no production of aluminium in India and all our requirements were met through imports, the principal supplying countries being the United Kingdom, Canada, Germany, Switzerland and Japan. Appendix VI gives a statement of imports of aluminium by countries, by total value and by average value per cwt. In so far as the future is concerned, the Indian producers apprehend that the world capacity has been developed to such an extent as to constitute a real menace to the home industry unless adequate steps are taken for its protection. The war years alone witnessed a fourfold increase in the world output of the metal. And it is feared that there are substantial surpluses, especially in Canada and in America, which might seek export markets through dumping and other devices. There is also the danger of rate wars in view of the termination of the pre-war international cartel which for many years dominated the industry by regulating production, prices and movements. Canada has already reduced its prices, threatening the existence of even pre-war established industries of countries like Sweden. Canada, where the cost of production is the lowest (about £60 per ton), can be regarded as the principal competing country in regard to ingots. Sheets and circles are expected to be imported from the United Kingdom which ordinarily imports Canadian ingots, rolls them into sheets and circles and exports the latter to India. The Indian rolling industry has sufficiently developed to roll about 10,000 tons of ingot and therefore the scheme of protection should be so devised as to result in the full employment of the Indian rolling industry, only such quantity of sheets and circles being imported as cannot be

rolled in India. Formerly, most of the imports took the form of sheets and circles with the result that the home rolling industry could not expand to extent justified by the demand.

Certain types of aluminium products are at present not being manufactured in India and their import must therefore be permitted. In this category will fall aluminium rods required for the aluminium cable industry. The total requirement of such rods will be 1,000 tons per annum with effect from 1947 ; and, as they will be required by one particular firm, *viz.*, the Aluminium Industries, Ltd., of Trivandrum, the Board would recommend that the firm should be enabled to import them direct until one or two non-ferrous rolling mills (such as the National Rolling Mills, Calcutta, which will be equipped for rolling these rods) can supply them to the Trivandrum firm.

Strips and coils required by the foil industry are not at present produced in India and must be imported, but the Indian Aluminium Company has ordered out rolling equipment which will turn out these strips and which is expected to go into production by the end of 1946.

Domestic production.

12. (1) *The Indian Aluminium Company.*—As mentioned in an earlier paragraph, production of aluminium ingots in India was not achieved until March 1943 in the case of the Indian Aluminium Company, and July 1944 in the case of the Aluminium Corporation of India. The rolling mills of the Company began operation in 1941, while its alumina plant is not expected to commence production until January 1947. The main units of the Company have the following productive capacities :—

	In tons per year.
Rolling mills	1,600 mainly of sheets and circles.
Reduction works	5,000 of ingot.
Alumina works	10,000 of alumina.

The alumina works are designed so as to be capable of expansion to a capacity of 20,000 and later even 40,000 tons of alumina per annum — subject, of course, to modifications and additions of equipment should the need arise for such development. The Company has at present no intention of increasing the capacity of the smelter at Alwaye. The rolling mills are being added to from time to time to take on new load such as production of strips and coils for the aluminium foil industry. Actual production of ingot (approximately 1,500 tons per annum) has, however, fallen considerably short of the rated capacity owing to various reasons, mainly the shortage of power at the smelter, *vide* Appendix V. Lack of raw materials, labour troubles and incomplete equipment have also contributed to the low output. In the case of the rolling mills, for instance, the production of strips and coils is held up for want of a motor which has been ordered but not arrived. The Company does not expect to produce more than 2,500 tons of ingot per annum in the next three years for want of electric power which it is stated had been promised by the Travancore

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Hydro-electric Scheme, but could not be supplied owing to several difficulties. As the demand for aluminium in the country is considerably in excess of the total rated capacity of both the producers, we recommend that Government should take active steps to ensure that the reduction works at Alwaye get the power necessary for attainment of full production as early as possible. It should be noted that, unless the reduction works operate to full capacity, the alumina works of the Company, too, cannot be put on a basis of full production. This raises the cost of both alumina and ingot and would necessitate payment by the State of a higher subsidy which is one of the forms of assistance recommended by us.

(2) *The Aluminium Corporation of India.*—The rated capacity of the reduction works of the Corporation is 2,000 tons per annum, whereas the capacity of its alumina works is 6,000 tons per annum. Considering that two tons of alumina are required for the production of one ton of aluminium, it would appear that the Corporation has surplus capacity of alumina for which it will be difficult to find a market in the country. It follows that the plant of the Corporation is not properly balanced and this is one of the causes contributing to the high cost of production of the Corporation. It has not so far been possible for the Corporation to attain even the capacity of 2,000 tons of aluminium per annum as it has been found that the existing equipment needs at least one more boiler to step up production to that level. The unbalanced character of the plant of the Corporation can be traced to the fact that the plant was ordered from two or three different fabricators, without proper planning and co-ordination ; and this has been one of the principal difficulties which have beset the Corporation from the very beginning. The present management of the Corporation cannot also be acquitted of responsibility for not having taken adequate steps to order out the missing links with the least possible delay. For instance, the Corporation has long felt the need for a third boiler, but so far no order has been placed for one. This again is the result of lack of proper technical direction in the management of the Corporation which is one of the points which impressed the Board in the course of its examination of the difficulties of the Corporation. Volume of production has, of course, a very important bearing on the cost of production and, therefore, on the measure of protection to be extended to the industry during the interim period. We have, therefore, gone into this matter with some care and have calculated the cost of production for the Corporation on the assumption that it should be able to produce 810 tons in the last six months of the current financial year, 2,000 tons in 1947-48, and 2,400 tons in 1948-49. The Corporation disputed these assumptions and pointed out that it would not be able to produce more than 600 tons in the second half of the current year (1946-47), 1,620 tons in 1947-48, and 1,920 to 2,000 tons in 1948-49. If the point of view of the Corporation were to be accepted, it would be entitled to much higher costs of production than the Board is prepared to recognise. The Board is satisfied that the assumptions in regard to quantity of production made by it in the case of the Corporation are not incapable of attainment if due care and diligence are shown by the management to obtain the missing parts as soon as possible and to reach the maximum output.

For the Company we have assumed a production of 2,000 tons in 1946-47 and 2,500 tons in each of the years 1947-48 and 1948-49. It should be possible for the Company to attain a production of 5,000 tons in 1948-49 if the extra electric power is required by it is made available by the Travancore Hydro-electric Scheme. It is interesting to note that on a production of 2,500 tons, the cost of production, inclusive of profit, will be Rs. 1,900 per ton of ingot whereas, if the production were 5,000 tons, the cost would fall to Rs. 1,577 per ton. This would make a substantial difference in the amount of subsidy that would be payable to the Company under the scheme recommended by us in this report. In any case, the total productive capacity of both the works is 7,400 tons of ingot against the estimated requirements of the country of 20,000 tons per annum, thus leaving a big gap of over 12,000 tons to be bridged by imports. The figures also indicate the scope for further expansion of the Indian aluminium industry. Opinions vary as to what would be an economic unit of production, some regarding production of 5,000 tons of ignot as minimum capacity of an economic unit while some others feel that a production of 2,000 or even 1,000 tons of ingot would prove economical under certain conditions. This is a matter, however, for investigation and planning. We have indicated elsewhere in this report the scope that exists for expansion of the rolling capacity from the present limit of 10,000 tons to 20,000 tons.

(3) *Utensil fabricators.*—There is a very large number of aluminium facricating plants scattered all over the country and engaged mainly in the manufacture of domestic utensils. A list of important manufacturers of this type has been compiled and forms Appendix VII. All these factories were assisted in wartime by releases of aluminium sheets and circles for the production of utensils in accordance with the Aluminium Utensils Control Order, which was promulgated by the Department of Industries and Civil Supplies with the object of—(a) regulating distribution of aluminium intended for civil use ; (b) manufacture of only certain types of utensils ; (c) fixation of prices ; and (d) stamping of such prices on the utensils for the benefit and protection of the consumers.

(4) *Quality of indigenous production.*—Regard being had to the fact that aluminium is used in India mainly in the manufacture of cooking utensils, it is desirable that a minimum standard of purity should be laid down in consultation with the Metallurgical Inspectorate at Tatanagar. We were advised that this purity should be 99.4 per cent. The Indian Aluminium Company's product comes up to this purity ; in fact, it is generally 99.6 per cent. pure. But the product of the Corporation needs improvement.

(5) *Equipment of rolling mills.*—Most of the Indian sheet rolling mills which came into existence during the war, are operated by crude methods with inefficient and improved equipment. We recommend that Government should help these rolling mills to procure modern up-to-date equipment from abroad as soon as possible, as it is essential that the rolling mill capacity as well as hollow-ware manufacturing capacity of the country is increased adequately to cope with the demand for these materials. A concession of rebate on the duty paid on such machinery should be given in order to stimulate the desired expansion.

Cost of Production.

13. We have indicated earlier in the report the raw materials required for the production of aluminium, the process of manufacture generally adopted in this country, and what production should be assumed for the purpose of calculating the cost of production. We examined, with the aid of our Cost Accounts Officer, the figures of cost of production of the two producers and also scrutinised their estimates of future costs to determine what the cost of production should be each year until the end of March 1949. The existing costs of production are inordinately high and although they have been accepted and acted upon by the Supply Department for the purpose of the pool system, to which a reference will be made later in this report, they could not be accepted by the Board as a basis for the scheme of protection which includes in this case both a substantial duty and a substantial subsidy. The price based on cost of production ,including profit as approved and paid by the Supply Department to the two producers was Rs. 3,182 per ton to the Company and Rs. 3,538 per ton to the Corporation in 1945 ; and Rs. 2,825 per ton to the Company and Rs. 3,538 per ton to the Corporation in 1946. As against that, our estimates of cost of production plus reasonable profit are Rs. 2,417 per ton in 1946-47, Rs. 2,186 per ton in 1947-48, and Rs. 1,900 per ton in 1948-49 in the case of the Company ; and Rs. 2,448 per ton in 1946-47, Rs. 2,176 per ton in 1947-48, and Rs. 1,868 per ton in 1948-49 in the case of the Corporation. The cost sheet of the Company has been prepared on the basis of its importing all alumina from abroad in 1946-47 and using partly imported alumina and partly alumina made at the Muri works in 1947-48 and wholly indigenous alumina in 1948-49. The price at which alumina is imported by the Indian Aluminium Company from its associate in Canada, *viz.*, Rs. 484 per ton, appeared *prima facie* high and was queried by the Board, but the Managing Director of the Indian Aluminium Company assured the Board that the price charged to India was the same as that charged to the American and United Kingdom Government plants during wartime and that there was no discrimination against India. Mr. Hall, the Managing Director of the Indian Aluminium Company, could not, however, give figures of the cost of production of alumina of the Canadian supplying firm, and the Board could not in the short time available pursue the point further. Every attempt was made to co-ordinate the items of expenditure of both the Company and the Corporation after making due allowance for the difference in plants and for the different rated capacities and the result was a remarkable similarity in the costs of production of the two concerns. In the first year, *viz.*, 1946-47, the Corporation's cost is slightly higher than that of the Company because of the lower output of the former. In the second year, *viz.*, 1947-48, the Company's cost is a trifle higher than that of the Corporation, although the Company's output would also be higher (2,500 tons against 2,000 tons of the Corporation) because the Company would have to depend partly upon imported alumina, the cost of which is higher than that of alumina produced by the Corporation and likely to be produced by the Company later in the year and in subsequent years. The Corporation has certain advantages over the Company such as the availability of coal on the spot, the contiguous location of the alumina works and smelter and consequent economy in freight charges. As against this, the Company's alumina will have to be brought from Bihar to Alwaye

and ingots will have to be moved from Always to Calcutta. The relative handicaps of the Corporation are the higher cost of energy in spite of proximity to coal fields, unbalanced plant inherited from previous owners, low production capacity and lack of proper technical knowledge in the higher direction. These advantages and disadvantages of the Corporation and the Company generally cancel out, and the prospective cost of production of the Corporation works out roughly to the same figure as that of the Company. The advantages which the Company enjoys by reason of its up-to-date plant and better technical direction as a result of its association with some of the biggest producers of aluminium in the world are dissipated in the heavy railway freights involved in the long haulage of raw material and ingot and in the higher overhead charges. In course of time, however, the Company will have an advantage over the Corporation and this is apparent from the fact that when both factories are working to full capacity, the estimated cost of production, inclusive of profit, of the Company will be Rs. 1,577 per ton of ingot, whereas that of the Corporation will be Rs. 1,868 per ton of ingot. In both cases, we have allowed profit on a uniform basis, *viz.*, 10 per cent. on cost of production. The usual practice followed by the Board is to allow 4 per cent. interest on working capital and 10 per cent. profit on the block. If the interest and profit had been calculated on this basis in the present case, they would have amounted roughly to Rs. 700 per ton, which is quite out of proportion not only to the cost of production but also to the price of imported aluminium. The block in the case of the Company is Rs. 151 lakhs and the working capital is estimated roughly at Rs. 25 lakhs, equal to six months' turnover. The profit which we have allowed, *viz.*, 10 per cent. on cost, represents 2½ per cent. on the block and working capital put together. This may appear to be somewhat low, but it has to be remembered that for a concern like this the block is very high and the usual return of 10 per cent. on block cannot, in the circumstances, be accepted, particularly at a time when the industry is struggling to make both ends meet and is claiming a subsidy to be able to withstand competition from abroad. A particular reason why a full return on the entire block capital forms such a high proportion (40 per cent.) of the cost of production per unit lies in the present small output of the producing concerns relatively to their productive capacity. If and when the full rated production of the two concerns is attained, the disparity in results between the two bases of reckoning profits will not be so considerable.

As for the Corporation, the block is Rs. 140 lakhs and the working capital is estimated at Rs. 22½ lakhs. The profit allowed by us on the total of the block and working capital also figures out to 2½ per cent., which is the same proportion as in the case of the Company. We feel that we are justified in departing in this case from our usual method of calculating profit for the purpose of arriving at a fair selling price which is made up of cost of production and profit.

We are not giving in this report details of the actual cost of production of the two concerns as they represented that their figures were confidential and should not be included in the report to be published. We have, therefore, been obliged to enclose a separate confidential note showing how the cost of production has been made up in each case for each of the three years 1946-47 (October-March), 1947-48 and 1948-49.

Cost of imports.

14. In an earlier paragraph we have shown that Canada is likely to be the principal competing country in so far as imports of ingots are concerned and the United Kingdom for imports of circles. We have tried to obtain reliable figures of cost of importation of ingots, sheets and circles in respect of both Canada and the United Kingdom.

Ingots.—The following table gives the figures of cost of importation of ingot from the United Kingdom and from Canada :—

	(Rupees Per ton)	
	United Kingdom.	Canada.
F.o.b. price (8 annas 3½ pies per lb.)	1,161	..
C.i.f. price	1,248	965
Duty at 30 per cent. *ad valorem*	374	290
Landing charges	18	18
Landed cost inclusive of duty	1,640	1,273
Landed cost ex-duty	1,266	983

The difference between the landed cost of imports from the United Kingdom and Canada is so great that in a free market there is little possibility of import of ingots from the United Kingdom. For the purpose of calculating the measure of protection, therefore, we shall take the Canadian prices.

Sheets and circles.—The lowest prices quoted in respect of sheets and circles are again from Canada and we shall adopt these figures for the purpose of determining the measure of protection. The cost of importation of Canadian sheets and circles is as under :—

	Per ton.
	Rs.
C.i.f.	1,871
Landing charges	18
Duty at the rate of 30 per cent. *ad valorem* ..	561
Landed cost inclusive of duty	2,450
Landed cost ex-duty	1,889

The figures of landed cost of Canadian aluminium including ingots, sheets and circles are expected to remain steady till the end of December 1947. They represent the latest quotations after effect has been given to the price reduction recently announced by both Canadian and British aluminium interests. The latest figures are lower than the landed costs not only of

December 1945 but even of pre-war years, in so far as ingots are concerned. The following table gives the landed costs of Canadian ingots, sheets, and circles, pre-war, in December 1945 and latest :—

	(In rupees per ton)		
	Ingots.	Sheets.	Circles.
Pre-war	1,305	1,730	1,540
December 1945	1,470	2,570	2,660
Latest	1,273	2,450	2,450

It is understood that owing to expansion of production and improvement in technique, the cost of production in Canada the main producing country, has fallen considerably and is now estimated at £60 per ton. This figure is also likely to be equalled by American producers of aluminium. The production of aluminium before the war was controlled by a strong international cartel. The cartel has now been dissolved and is unlikely to be renewed as competitors, more or less of equal strength, have developed for meeting the growing demands during wartime. There is also reason to believe that the industry is committed for its prosperity to following a low price policy for extending the use of aluminium. All this points to the possibility of prices being still further reduced and competition becoming even fiercer in the near future. It is necessary to refer to these trends so that the Indian industry may take steps to put its house in order, particularly taking advantage of the protection that would be afforded under our scheme during the period of the next two and a half years.

Selling price.

15. We have seen that the minimum landed cost ex-duty of aluminium ingot during the next two years is likely to be Rs. 938 per ton, the competing country being Canada, whereas the minimum fair selling price of the Indian producer which we should expect is Rs. 2,417 per ton in 1946-47, Rs. 2,176 per ton in 1947-48 and Rs. 1,868 per ton in 1948-49. The gap between the Indian cost of production and the minimum landed cost ex-duty in the first two years is so great that even a 100 per cent. duty will not be sufficient to protect the home producers. It would also not be fair to the consumer that aluminium should be sold to him at more than double the price of the imported metal ; we cannot view with equanimity a situation in which aluminium though imported at something like Rs. 1,273 per ton (inclusive of existing duty) should be sold at a price of Rs. 2,417 per ton. Besides, the use of aluminium could be popularised only by a policy of keeping prices as low as possible. A means has to be found to enable the metal to be made available to the consuming interests at a reasonable price while at the same time safeguarding an industry which is regarded to be of vital interest to the country. This, in our view, could best be done by fixing a reasonable selling price and imposing a duty which would raise the landed cost to that level and by paying a subsidy to the home producer which would enable him to sell his output at

the "target" price without incurring any loss; that is to say, the problem has to be met by a system of protective duty on imports on the one hand and subsidy to the home producer on the other. The first desideratum for this purpose is to fix a reasonable selling price at which the consuming interests may get the product. Before the war, the landed cost of ingots was over Rs. 1,305 and the selling price was slightly higher. In wartime, with the pool system in operation, the selling price of ingot was Rs. 2,300 per ton in 1945 and Rs. 2,100 per ton in 1946. The main interest concerned in the consumption of aluminium in the country is the utensil-making industry although other industries consuming aluminium are growing fast. We have consulted the representative of the principal utensil manufacturer as well as certain other interests and consider that a selling price of Rs. 1,600 per ton of ingot during the next triennium would be reasonable and afford considerable relief in relation to the present position. A price of Rs. 1,600 per ton is equivalent to Re. 0-11-5 per pound which is below the price of Re. 0-12-0 per pound which was suggested to us by many interests, for the purpose of fixing the issue price of ingot. This price represents less than 25 per cent. increase over the pre-war price, compares very favourably with prices of other non-ferrous metals, and is substantially below the wartime issue price to which the consuming interests have been accustomed during the last two years. We, therefore, recommend that the selling price of Rs. 1,600 per ton of ingot should be adopted for the period ending March 1949 and that the scheme of protective duty-cum-subsidy should be based on this price. This price should be fixed as the maximum selling price by an order having the effect of law so that foreign producers may not take advantage of the necessity of this country to import a large quantity of ingot and inflate their export price. Fortunately, the dissolution of the international cartel which was the feature of the industry before the war and the possibility of competition among different producers should render any such contingency remote, but even so, we see nothing but advantage in a scheme under which a maximum price is fixed for the sale of aluminium ingot during the period of protection. Maximum selling prices should be fixed for sheets and circles as well, for these products will also be imported to a certain extent. The maximum price for sheets and circles should be Rs. 2,450 per ton which is the present lowest landed cost (inclusive of duty) and at which level there should be no danger to the Indian rolling industry.

Measure of protection: (1) Protective duty.

16. (*a*) *Ingots.*—Having arrived at a reasonable selling price to the consumer, and having worked out the cost of importation, it is easy to determine what the measure of protection in the form of a protective duty should be. There is at present a revenue duty of 30 per cent. *ad valorem* on aluminium ingots, aluminium sheets and circles and aluminium products except those which fall under other categories such as electrical conductors under which head certain aluminium rods are at present being imported, which are subject to a duty of 10 per cent. *ad valorem*. Dairy equipment made of aluminium is also imported at present duty free. We have shown that the landed cost ex-duty of aluminium ingots from Canada, the principal

competing country, is Rs. 983 per ton, and we have recommended that the selling price should be Rs. 1,600 per ton. The difference between the two should be made up by means of a protective duty which would come to Rs. 617 per ton as against the present duty which is equivalent to Rs. 290 per ton on the basis of 30 per cent. *ad valorem* on the existing c.i.f. price. We should reduce this amount of Rs. 617 per ton by Rs. 27 per ton which roughly represents the importer's profit margin which is added to the landed cost before the ingot is sold to the consumer. The duty to be levied should therefore be Rs. 590 per ton. The difference between the existing duty and the proposed duty would be Rs. 300 per ton. or 31 per cent. *ad valorem* if percentage figures are compared. We prefer a specific to an *ad valorem* duty as it enables the measure of protection decided upon to be maintained more easily and effectively than by an *ad valorem* duty. The duty should be imposed for the period ending March 31, 1949. The duty is based on two assumptions, *viz.*, Rs. 1,600 per ton as the selling price and Rs. 983 as landed cost ex-duty with an allowance of Rs. 27 per ton as the importer's profit margin. If the landed cost ex-duty falls below Rs. 980 per ton, action should be taken under section 4(1) of the Indian Tariff Act, 1934, to raise the duty so as to maintain the measure of protection recommended by us. We do not suggest that there should be any modification in the selling price during the period of protection.

(*b*) *Sheets and circles.*—The selling price or price for the consumer suggested by us is Rs. 2,450 per ton. The lowest landed cost ex-duty is Rs. 1.889 per ton. The difference, *i.e.*, Rs. 561 per ton, should be the duty sufficient to protect the home producer. We have, however, recommended above a duty of Rs. 590 per ton in the case of ingot and it would be anomalous to have a lower duty for sheets and circles. We, therefore, recommended that a specific duty of Rs. 590 per ton should be levied on aluminium sheets and circles also for the period ending March 31, 1949. Should the landed cost ex-duty fall below Rs. 1,880 per ton, the quantum of duty should be raised so as to maintain the measure of protection recommended by us and thereby bring up the total landed cost including duty to Rs. 2.450 per ton. The rise in the duty on sheets and circles will only be slight, our recommendation mainly being to convert the present *ad valorem* revenue duty into a specific protective duty. For the purpose of sheets and circles, we have adopted the landed cost figures of 18 and 20 gauge which we were advised were the most commonly used and the most extensively imported. There is no case for varying the duty with gauge. If our scheme of protection is accepted, ingots would be available to the rolling industry at Rs. 1,600 per ton. The rate of conversion of ingots into sheets and circles is not more than Re. 0-4-0 per pound, *i.e.* Rs. 560 per ton, including provision for process losses. The cost of sheets and circles produced in India would thus be Rs. 2.160 as against which the lowest landed cost would be Rs. 2.450 thus affording ample protection to the Indian rolling industry. It may be argued that the duty on sheets and circles should be lowered so as to approximate the landed cost to the cost of production in India but we are not in favour of such a proposal for two reasons. In the first place, such a proposal would involve a reduction in the existing duty which would be anomalous in view of the increased duty which we have been obliged to recommend to protect the Indian ingot industry. Secondly, our rolling capacity is only half of our total requirements and, therefore, if there is a fair margin in favour of the Indian producer, the rolling industry would be stimulated and advantage would be taken of the protection to make the country self-sufficient in respect of rolling.

(2) Subsidy.

The second integral part of our scheme of protection is payment of subsidy to the home producer equal to the difference between fair selling price, or cost of production including profit, and the selling price recommended by us. As the cost of production of the two producers is different and would again be different from year to year, the subsidy payable would also be different and would vary from year to year. The subsidy payable on the basis of costs of production figured out by us is shown in detail in Appendix VIII attached to this report, but is extracted below for facility of reference :—

Summary of subsidy payable to the producers.

(All figures in lakhs of rupees)

Producer.		1946-47 (six months ending 31st March 1947).	1947-48.	1948-49.	Total.	Per ton on an average for the three years.
						Rs.
Indian Aluminium Company	..	8·17	14·70	7·50	30·37	506
Aluminium Corporation of India	..	6·87	11·52	6·43	24·82	476
Total	..	15·04	26·22	13·93	55·19	491

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The total subsidy payable comes to Rs. 15.04 lakhs in 1946-47 (October-March), Rs. 26.22 lakhs in 1947-48 and 13.93 lakhs in 1948-49, the total being Rs. 55.19 lakhs. As between the two producers, a sum of Rs. 30.37 lakhs would be payable to the Indian Aluminium Company, and Rs. 24.82 lakhs to the Aluminium Corporation of India. The incidence of subsidy per ton of ingot works out to Rs. 506 in the case of the Indian Aluminium Company and Rs. 476 in the case of the Aluminium Corporation and Rs. 491 per ton for the industry as a whole. The subsidy to the Indian Aluminium Company in 1948-49 would be reduced to practically nothing if the Company were enabled to produce 5,000 tons of ingot by being given necessary power from the Travancore Hydro-Electric Scheme. Whether part of the subsidy payable to the Indian Aluminium Company should come from the Travancore State is a matter for consideration. If such an obligation were undertaken by the Travancore State authorities, they might be induced to expedite supply of additional current to the Indian Aluminium Company. We only make this suggestion for the consideration of Government. The position should be reviewed in the middle of the protection period to see if the production assumed by us is exceeded, resulting in lower cost of production and necessitating payment of a lower subsidy although the selling price may remain as assumed.

Financial implications.

17. The financial implications of our proposals for additional protective duty and subsidy are indicated in the Statement in Appendix VIII. It will be noted that the additional amount of revenue to be derived from the duty proposed by us is estimated at Rs. 106.80 lakhs on the assumption of an annual consumption of 20,000 tons. We have said in our report that all indications point that the consumption will attain this level in view of the increasing uses to which aluminium is now being put and of the great disparity in the prices of aluminium and other non-ferrous metals. As against the additional estimated revenue of Rs. 106.80 lakhs, the subsidy would not exceed Rs. 55.19 lakhs. The subsidy may be even less if the production of either factory falls below the figures adopted by us, which is not unlikely, knowing as we do the difficulties encountered by the two producers in stepping up their output. We may add that we have erred, if at all, on the side of financial caution in these calculations.

Aluminium Development Fund.

18. Even after paying Rs. 55.19 lakhs by way of subsidy out of the additional expected revenue of Rs. 106.80 lakhs, there will be left a balance of Rs. 51.61 lakhs. In a later section of this report (paragraph 21), we have indicated that a balance of Rs. 7,72,593 existed on 1st April 1946 on the credit side in the aluminium pool fund, and, along with the closure of the pool arrangement, we have recommended that this balance should be merged into the balance left over from the additional expected revenue after paying subsidies to the two aluminium companies. Thus the total amount expected to be available over a period of 2½ years would be nearly Rs. 59 lakhs. We recommend that a substantial part of this surplus should be used for creating an Alminium Development Fund to be utilised for research on, and development of, the aluminium industry in India. We consider it right that at least a part of the proceeds derived from an additional import on aluminium is devoted to the development of the industry especially when it is still in a state of infancy, is in urgent need of stimulation and development and has vast potentialities in a country which has abundant raw materials for the industry and is deficient in the other non-ferrous metals which can be replaced to a great extent by aluminium and its products. We have not gone into the details regarding the planning of the aluminium industry and are not therefore in a position to make positive recommendations as to how the Aluminium Development Fund should be utilised. We may, however, indicate in general terms some of the items on which expenditure may be incurred from this fund. There is a vast field for research and development of aluminium alloys, especially light alloys. The aluminium industry may be helped to obtain electric power at cheap rates by means of subsidy from this fund. New reduction works may be encouraged to make up the deficiency between the demand and the existing production of ingots in the country. Technical personnel could be trained in the production of aluminium and its alloys at important aluminium works in other parts of the world. An aluminium development officer, trained in the production of aluminium and capable of advising the home industry might be appointed. These are some of the ways in which the fund may be usefully employed. These

We considered whether the selling price could not be reduced to Rs. 1,500 per ton from Rs. 1,600 per ton recommended by us so as to leave any substantial balance after meeting the demands of subsidies, but we came to the conclusion that such a step might be fraught with considerable risks. A lower selling price would mean a lower duty and therefore reduced realisations from duty. On the other hand the gap between the selling price and the cost of home production would be wider and a very much larger subsidy than Rs. 52.97 lakhs would be payable. Lastly, our anticipation of annual consumption during the next three years, though appearing conservative at present, may not materialise and the total realisations from additional duty may fall short of the amount of subsidy payable under the scheme, thereby necessitating an inroad on the general revenues which might be open to objection from many points of view. Considering the prewar prices and the prices to which consumers of aluminium have been accustomed, a selling price of Rs. 1,600 is reasonable and it would not therefore be desirable to run the risks mentioned above merely with the object of striking a balance between additional revenue and subsidy on the basis of an assumed level of imports.

Condition for payment of subsidy.

19. Under our proposals a very substantial amount would be payable as subsidy to both the Indian Aluminium Company and the Aluminium Corporation. The subsidy enables the Indian industry to survive and to consolidate its position and is thus a very positive form of assistance during the critical period. The consumer would be paying a higher price for his requirements in order to enable the home industry to survive. It would therefore be reasonable to expect the fulfilment of certain essential conditions before a subsidy is paid to the producers. One condition which we recommend should be imposed is that each producer must agree to have a Government director on its Board of Directors, with the same powers, privileges and functions as any other director on the Board. The Government director must also have the right to call for any information from the management in regard to the working of the company. He must have access to all the records and papers of the company. He must be there to assure Government and the public that the subsidy which is being paid is not being abused, that the economics which could be effected to curtail cost of production are not being postponed or evaded under the shelter of protection and that the sacrifices which the consumers are called upon to make to enable the industry to survive are not being turned to the profit either of the management or of the shareholders. We put this proposition to both the Company and the Corporation but we could not have a final reply from their representatives as regards their attitude to this proposal. We consider that if any of these concerns fails to accept this condition, it should be debarred from the benefit of subsidy, although it may enjoy the protection afforded through the imposition of a high protective duty.

In the course of our inquiry, it came to the knowledge of the Board that the Indian Aluminium Company was originally started as a purely foreign concern, though registered in India, and that only in 1945 it threw open one-third of the share capital to be held in India. Although the Board of Directors contains five Indians out of a total of nine Directors, management and control vest for all practical purposes in non-Indian hands. In our scheme for the subsidy, we have ignored these considerations and have made calculations purely on the basis of volume of production, the cost of production and the proposed fixed selling price. We do not know what the constitutional position is regarding the eligibility of such concerns to subsidy and similar forms of State aid. *Prima facie*, it would appear anomalous that the Indian Government should pay a subsidy to a concern the major portion of the capital of which is held by nationals of other countries. If after a consideration of all the relevant circumstances, including the facts that this concern rendered valuable assistance in wartime, that two-thirds of the share capital is held by Indian and British interests, that this concern is responsible for a major portion of the production of aluminium in the country and that healthy competition is in the interest of consumers generally, Government should come to the conclusion that the Company should also be given the subsidy, then we recommend that the scale of subsidy should be as proposed by us. It is also a matter for consideration by Government whether as a condition precedent to the grant of subsidy, the Company should be called upon to alter its constitution so as to vest a majority of share capital and the control into Indian hands within a reasonable period. Even in management, there is scope for Indianisation in higher ranks. At present, the Managing Director and the Works Managers of all the three component units are non-Indians. It should be possible to find suitable men to fill the posts of at least the Works Managers at the three places.

The conditions which should be imposed on the Corporation before subsidy is paid are :—

(1) Arrangements are made to procure an additional boiler to step up present production within a specified time.

(2) Additional equipment is ordered to step up production of ingots to the full rated capacity of 3,000 tons per annum within a stated time.

(3) The Board of Directors of the firm should have as a technical director, a person who has experience of the production of aluminium, and not as at present a person who has never worked in an aluminium factory.

Both the concerns must unreservedly accept the above conditions, their fulfilment being watched by the Government director.

Removal of restrictions on imports.

20. Import of aluminium products is at present regulated by a system of import licences. This was necessary because of the wartime difficulties of shipping and of the need to see that the home industry was not jeopardised by a free flow of low-priced imports. With the introduction of protection as recommended by us, aluminium products should be put on the list of open general licence with effect from the date on which the scheme of protection comes into force. This should apply to all aluminium products, *i.e.*, ignots, sheets, circles, powder, strips, coils, foil, aluminium rods, soft aluminium, and aluminium alloys of all kinds.

Pool arrangement.

21. In the first few years of the war, there were practicallly no imports of aluminium. Local production came into being in 1943 and it also became necessary to import substantial quantities of aluminium to meet

local products varied considerably, it was necessary to evolve a scheme under which the product could be sold in the market at a uniform price. This resulted in the establishment of a pool arrangement, with effect from the 1st March 1945. Supplies made to the pool were as follows :—

Source of supply.	1945.	1946.
	Tons.	Tons.
Indian Aluminium Company	1,344	1,600
Aluminium Corporation	900	1,000
Imports	4,572	10,300
Total	6,816	12,900

A common price was arrived at by pooling the cost of imports and the price paid to the producers after costing. The prices paid to the two producers in 1945 and in 1946 were as follows :—

Producer.	(In rupees per ton.)	
	1945.	1946.
Indian Aluminium Company	3,182	2,825
Aluminium Corporation of India	3,538	3,538

The cost of importation was as follows :—

Source of supply.		(Figures relate to import of ingots.)	
		1945.	1946.
		Rs. a. p.	Rs. a. p.
United kingdom	per lb.	0 11 8⅛	0 11 8⅛
	per ton	1,639 0 0	1,639 0 0
Canada	per lb.	0 11 6	0 10 7
	per ton	1,610 0 0	1,482 0 0

The disparity in the price of imported aluminium and Indian-made aluminium made it possible to fix a uniform price for all issues at an intermediate figure which was Rs. 2,300 per ton in 1945 and Rs. 2,100 per ton in 1946. After paying all the sums due to the two producers, there was, on 1st April 1946, a sum of Rs. 7,72,583 on the credit side in the pool fund. This sum should be merged in the Aluminium Development Fund, the creation of which we have recommended earlier in this report. The pool should be terminated when the scheme of protection comes into force.

Both producers suggested that the pool should be continued for some time more but we are not in favour of this proposal. Once the home producer is put on a basis of parity with an importer as regards price, it is healthy to have free competition and uncontrolled imports. The pool arrangement is in the nature of spoon-feeding and is not in the ultimate interest of the Indian industry which must work on a peace-time footing as soon as possible. Besides, the pool implies Government trading and restricted number of importers or stockists, both of which may be appropriate in wartime but unsuitable in conditions of free market which should now prevail. We have therefore not endorsed this request of the manufacturers.

Reduction in prices of aluminium utensils.

22. In 1945, the Central Government in the Department of Industries and Civil Supplies promulgated the Aluminium Utensils Control Order, a reference to which has been made earlier in the report. The price fixed for utensils under the provisions of this Order has not been examined by us but sufficient material has come to our notice to warrant our saying that the price fixed is on the high side and needs revision, the more so when the scheme of protection comes into force and the price of ingot is reduced from the present level of Rs. 2,100 per ton to Rs. 1,600 per ton. The charges allowed to the utensil prducers by way of processing need particular attention and revision.

Alumimium foil.

23. There is one factory, *viz.*, Messrs. Venesta Ltd., in Calcutta, which has been meeting the requirements of the tea industry in respect of lead lining. This lining is now being gradually replaced by aluminium foil. This factory has capacity for turning out 700 tons of aluminium lining sufficient to meet all the demands of the Indian tea industry. It also proposes to meet the requirements of the markets in adjacent countries in respect of this item to the extent of 600 tons per annum. The firm is a purely British one owned and managed by British interests. When a representative of the firm was asked whether it had any plans for Indianising either the share capital or the management, he said that there was no such proposal, but that if the factory required expansion in future, this point would naturally be considered. In our opinion this is not enough and any concern which expects protection or assistance must show that the people of this country will be justified in making sacrifices to protect, assist or safeguard such industry or concern. We are not making any special recommendation in regard to aluminium foil which should be treated as an aluminium product subject to the protective duty of Rs. 590 per ton as recommended by us in the case of ingots, sheets and circles and other products. The representative of the factory stated that with this protective duty the foil industry would be able to survive competition from abroad in respect of all imports of aluminium foil. Strips and coils required by this factory for being rolled into foil will be made by the Indian Aluminium Company at its Belur rolling mills some time early in January 1947. The Venestas are also contemplating putting up a plant to roll finer foils for wrapping purposes required by the cigarette, chocolate and similar industries.

luminium cables.

24. The Aluminium Industries Ltd., of Trivandrum put in a claim for protection to the factory which is being erected by this firm. Production is expected to start from some time in July 1947. It will produce 1,500 metric tons of aluminium cables for which 1,000 tons of aluminium rods will be required. The factory will also need aluminium ingots to the extent of 300 tons for fittings and other purposes. The aluminium conductor rods are not being manufactured anywhere in India and will have to be imported. It is not clear as to what rate of duty would be levied on these rods ; since these are not shown as a separate item in the customs schedule, we are not in a position to ascertain the exact position. It was represented by the Aluminium Industries Ltd., that these rods are at present subject to a duty of 10 per cent., on the ground that they are a part of electrical machinery. The quantities imported at present of such rods are, however, small. When large quantities of the order of 1,000 tons per annum are imported, it is apprehended that these rods may be classified as ordinary aluminium products and subjected to the higher duty leviable on aluminium goods under our scheme. If this happens, the duty that will be levied will be Rs. 590 per ton. Such a high rate of duty will be detrimental to the establishment of the aluminium cable industry. The firm, therefore, requested that if the higher rate of duty is levied, a rebate should be given in respect of the duty paid on the rods imported by it. The request appears to us to be reasonable. Ordinarily, the duty on semi-finished goods which are raw materials of other industries should be lower than the duty on finished goods, the more so in the case of a nascent industry like aluminium cables. We, therefore, recommend that when the Aluminium Industries Ltd., of Trivandrum go into production, they should be given a rebate of duty in excess of the present revenue duty of 30 per cent., if it is decided that the rods are to be subject to the higher duty of Rs. 590 per ton. This rebate should be given on the basis of the actual quantity of aluminium cables produced by the firm and put on the market. The concession of rebate of duty in excess of 30 per cent. *ad valorem* should be extended to any other producers of aluminium cables who may come into existence during the protection period. The rebate payable under this recommendation may be a charge on the Aluminium Development Fund, if one is set up.

Association of producers.

25. The case for protection was put forward before the Board separately by the Indian Aluminium Company, the Aluminium Corporation of India and other concerns interested in the production of aluminium goods in India. Although the objects of all these representations were more or less the same, *viz.*, prevention of the Indian producer from being undercut by imports from abroad, presentation of cases by them lacked a certain amount of coherence and unity of action and purpose which would not have happened had there been an association of aluminium interests speaking with the weight and authority of the trade as a whole. We believe that in Britain, the Import Advisory Committee which corresponds to the Indian Tariff Board, encourages, in the course of its investigations, formation of associations which can speak for the industry as a whole ; and we think that a similar development may take place in this country with advantage to all. We would, therefore, commend to the

aluminium interests to strive for the formation of a strong organisation, comprising the whole industry and capable of giving it authoritative guidance and of representing it effectively *vis-a-vis* the Government and the organisation of the industry in other countries.

Eligibility for protection.

26. The first condition to be fulfilled by an industry for qualifying for protection is that it must be run on sound business lines. Despite the high costs of production of the Indian Aluminium Company, one cannot say that the industry is not run on sound business lines. Both the smelter at Alwaye and the rolling mills at Belur in Calcutta would be regarded as among the most up-to-date factories existing in India. The other concern, *viz.*, the Aluminium Corporation, is managed by the well-known firm of Juggilal Kamlapat of Cawnpore and on the whole that concern can also be said to be managed on fairly good business lines. There are some defects in the management to which we have drawn pointed attention and it is hoped that these defects will be removed with the least possible delay. The second criterion prescribed is that the industry must be well situated in regard to natural or economic advantages and that the industry should be such as would be able to stand on its own legs in course of time. We have shown that the cost of production of the Indian Aluminium Company should be nearly the same as the landed cost, subject to the usual revenue duty of 30 per cent. within three or four years, if the import price also does not fall in the meantime. The case of the Aluminium Corporation is not so reassuring, but it has the advantage of having production of alumina as well as aluminium concentrated in one place. It certainly gives hope of being able to carry on with only a small amount of protection or cost to the community. In any case, the aluminium industry is a vital industry and must not only be protected and assisted but also expanded substantially to meet all the requirements of the country in respect of this essential metal. Even the present industry with a limited output has a capital of nearly Rs. 4 crores which gives an indication of the importance and magnitude of the industry. We are, therefore, satisfied that the Indian aluminium industry satisfies all the conditions required for qualifying for protection.

Recommendations and conclusions.

27. Our recommendations and conclusions are stated as under :—

(1) The Board draws the attention of Government to the question of railway freights and port dues charged on raw materials and semi-manufactured goods and recommends examination by the appropriate authority with a view to eliminating factors which may retard the attainment of low costs of production of aluminium ingot and expansion of production of aluminium in the country (paragraph 6).

(2) Government should take active steps to ensure that the reduction works at Alwaye get the power necessary for attainment of full production as early as possible [paragraph 12(1)].

(3) Steps should be taken to encourage expansion of production so as to meet the home demand [paragraph 12(2)].

(4) Specifications should be prescribed to ensure the purity of the metal used in utensil making, this being essential in view of the large quantity of utensils consumed in the country [paragraph 12(4)].

(5) Government should help the rolling mills to procure modern up-to-date equipment from abroad as soon as possible [paragraph 12 (5)].

(6) The problem of protecting the industry has to be met by a system of protective duty on imports on the one hand and subsidy to the home producer on the other (paragraph 15).

(7) The scheme of protective duty-cum-subsidy should be based on the selling price to the consumer of Rs. 1,600 per ton of ingot for the period ending March 1949. This price should be fixed as the maximum selling price. The maximum selling price for sheets and circles should be fixed at Rs. 2,450 per ton equal to the present lowest landed cost (paragraph 15).

(8) A specific duty of Rs. 590 per ton should be levied on imports of aluminium ingot into the country for the period ending 31st March 1949. If the landed cost ex-duty on imported ingot falls below Rs. 980 per ton, action should be taken under section 4 (*1*) of the Indian Tariff Act, 1934, to raise the duty so as to maintain the measure of protection recommended by us. There should be no modification in the selling price recommended during the period of protection [paragraph 16 (1) (*a*)].

(9) A specific duty of Rs. 590 per ton should be levied on aluminium sheets and circles for the period ending March 31, 1949. Should the landed cost ex-duty fall below Rs. 1,880 per ton, the amount of duty should be raised so as to bring up the total landed cost including duty to Rs. 2,450 per ton and thereby to maintain the measure of protection recommended by us [paragraph 16 (1) (*b*)].

(10) A subsidy should be paid to the Aluminium Corporation of India and, if so decided by Government, to the Indian Aluminium Company, equal to the difference between their fair selling price or cost of production including profit and the selling price recommended by us. On this basis, the Company should be paid a subsidy of Rs. 817 per ton during the six months October-March 1946-47, Rs. 586 per ton in 1947-48 and Rs 300 per ton in 1948-49. The Corporation should be paid a subsidy of Rs. 848, Rs. 576 and Rs. 268 per ton respectively during the three periods. The subsidy should be paid on the actual production [paragraph 16 (2)].

(11) If the production assumed in the case of the Indian Aluminium Company were exceeded, the cost of production and fair selling price would correspondingly fall and the amount of subsidy payable should also be reduced. A review should be undertaken for this purpose some time in 1948 [paragraph 16 (2)].

(12) The cost of the subsidy can be met from the additional revenue expected as a result of the higher duties recommended, and a substantial part of the balance of such additional revenue, i.e., excluding the equivalent of the existing revenue duty proceeds, should not be carried to the general revenues of the State, but should constitute an Aluminium Development Fund to be utilised for the development of the aluminium industry (paragraph 18)

(13) Aluminium products should be placed on the list of open general licence with effect from the date on which the scheme of protection comes into force (paragraph 20).

(14) The pool arrangement should be terminated when the scheme of protection comes into force and the balance in the pool fund merged in the Aluminium Development Fund recommended by us (paragraph 21).

(15) The prices fixed for utensils under the Aluminium Utensils Control Order should be revised when the issue price of ingot is reduced from the present level of Rs. 2,100 per ton to Rs. 1,600 per ton (paragraph 22).

(16) Aluminium foil should be treated as an aluminium product, subject to the protective duty of Rs. 590 per ton as in the case of ingots, sheets and circles and other products (paragraph 23).

(17) The Aluminium Industries Ltd., of Trivandrum should be given a rebate on duty in excess of 30 per cent. on the basis of the quantity of aluminium cables produced and marketed by them. The concession of rebate of duty in excess of 30 per cent. *ad valorem* should be extended to any other producer of aluminium cables who may come into existence during the protection period. The rebate under this recommendation may be a charge on the Aluminium Development Fund, if our recommendation in regard to it is accepted (paragraph 24).

(18) We recommend to the aluminium interests to form a strong organisation comprising the whole industry for giving general guidance to the industry and representing it *vis-a-vis* Government and organisations of the industry in other countries (paragraph 25).

Acknowledgments.

28. We wish to place on record our thanks to Mr. A. J. Gonsalves, Cost Accounts Officer, who carried out cost accounting of both the Indian Aluminium Company and the Aluminium Corporation with great care and patience, to Dr. M. S. Patel for having helped us in the examination of the case from the technical point of view, to Dr. D. P. Antia of the Department of Industries and Supplies for the very useful notes furnished on various points and for his helpful advice and co-operation; to Dr. B. K. Madan, our Deputy Secretary for having supervised the preparation of the case at all stages; and to Mr. Kapur, Technical Adviser on Non-ferrous metals to the Board, for general assistance.

SHANMUKHAM CHETTY—President.
C. C. DESAI—Member-Secretary.
NAZIR AHMAD—Member.
H. L. DEY—Member.

B. K. MADAN—Deputy Secretary.
(Camp) Ootacamund, the 20th June 1946.

APPENDIX I

DEPARTMENT OF COMMERCE

RESOLUTION

TARIFFS

New Delhi, the 3rd November 1945.

No. 218-T (55)|45.—In the statement on industrial policy issued by the Government of India on the 23rd April 1945, it was announced that, pending the formulation of a tariff policy appropriate to the post-war needs and conditions of the country and the establishment of permanent machinery for the purpose, Government would set up machinery for investigating claims from industries, which have been started or developed in war-time and which are established on sound lines, to assistance or protection during the transition period. A press communique issued on the same date invited industries to address their claims to the Secretary to the Government of India in the Department of Commerce.

2. Several industries have accordingly applied for assistance or protection, and on a preliminary examination of their claims, the Government of India have come to the conclusion that applications submitted by the following industries call for a detailed examination:—

(i) non-ferrous metals, including antimony;
(ii) grinding wheels;
(iii) caustic soda and bleaching powder;
(iv) sodium thiosulphate, sodium sulphite anhydrous, sodium bisulphite;
(v) Phosphates and phosphoric acid;
(vi) butter colour, aerated water powder colour;
(vii) rubber manufactures;
(viii) fire hose;
(ix) wood screws;
(x) steel hoops for baling.

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Other applications are under the consideration of Government, and further action in their case will be taken in due course.

3. In addition to the industries which have applied for assistance or protection, there are certain industries the starting of which was considered essential by the Government of India under conditions created by the war. Early in 1940, Government announced that specified industries promoted with their direct encouragement during war-time might feel assured that, if they were conducted on sound business lines, they would, by such measures as Government might devise, be protected against unfair competition from outside India. In accordance with this decision, the following industries have been given as assurance of protection against unfair competition after the war:—

(i) bichromates;
(ii) steel pipes and tubes up to a nominal bore of 4 inches;
(iii) aluminium;
(iv) calcium chloride;
(v) calcium carbide;
(vi) starch.

Of these industries, only those engaged in the manufacture of bichromates, calcium chloride and starch have so far applied for assistance or protection during the transition period. The Government of India consider that the applications submitted by these three industries also call for immediate investigation.

4. For the purpose of these and any subsequent investigations, the Government of India have decided to set up a Tariff Board for a period not exceeding two years, in the first instance. The Board will consist of :—

PRESIDENT:

Sir R. K. Shanmukham Chetty, K.C.I.E.

MEMBERS:

Mr. C. C. Desai, C.I.E., I.C.S.

Professor H. L. Dey, D.Sc. (London).

The Board will include one more Member whose name will be announced shortly. Mr. Desai will act as Secretary to the Board in addition to his duties as Member.

5. The Tariff Board is requested to undertake, in such order as it thinks fit, the investigation of claims put forward by the industries specified in paragraphs 2 and 3 above. In the case of each industry the Board will, after such examination as it considers necessary, report whether the industry satisfies the following conditions :—

(1) that it is established and conducted on sound business lines; and

(2) (*a*) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance; or

(*b*) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive.

Where a claim to protection or assistance is found to be established, *i.e.*, if condition (1) and condition (2) (*a*) or (*b*) are satisfied, the Board will recommend—

(i) whether, at what rate and in respect of what articles, or class or description of articles, a protective duty should be imposed;

(ii) what additional or alternative measures should be taken to protect or assist the industry; and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations the Board will give due weight to the interests of the consumer in the light of the prevailing conditions and also consider how the recommendations affect industries using the articles in respect of which protection is to be granted. Since relief, to be effective, should be afforded without delay, the Board is requested to complete its enquiries with all possible expedition and to submit a report as soon as the investigation of the claim of each industry is concluded.

6. The headquarters of the Board will be at Bombay, but it will visit such other places as it thinks necessary for purposes of its enquiries. Firms and persons interested in any of these industries, or in industries dependent on the use of the products of these industries, who desire that their views should be considered, should address their representations to the Secretary to the Board.

7. Any claims hereafter received from other industries which in the opinion of the Government of India are suitable for examination by the Board will be referred to the Board in due course for examination.

8. The Government of India trust that Provincial Governments and Administrations will afford the Board all the assistance which it may require and will comply with any request for information which may be addressed to them by it.

N. R. PILLAI,
Secretary.

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APPENDIX II

GOVERNMENT OF INDIA

DEPARTMENT OF COMMERCE

New Delhi, the 16th February 1946.

RESOLUTION

TARIFFS

No. 218-T (55)|45.—In pursuance of pragraphs 2, 3 and 7 of their Resolution in the Department of Commerce, No. 218-T (55)|45, dated the 3rd November 1945, the Government of India have decided to refer to the Tariff Board for investigation applications for assistance or protection received from the following industries, namely:—

(i) Glucose;
(ii) All Abrasives other than Grinding Wheels;
(iii) Hurricane Lanterns ;
(iv) Cocoa Powder and Chocolate;
(v) Aluminium;
(vi) Preserved Fruits.

2. In making its enquiries, the Board will be guided by the principles laid down in paragraph 5 of the Resolution referred to above.

3. Firms or persons interested in any of these industries or in industries dependent on the use of these articles, who desire that their views should be considered by the Tariff Board, should address their representations to the Secretary to the Board, Caltex House, Ballard Estate, Bombay, 1.

4. Similar announcements will be made from time to time regarding claims from other industries found suitable for examination by the Board.

N. R. PILLAI,
Secretary to the Government of India.

APPENDIX III

List of persons and firms which submitted written evidence to the ***Board.***

1. The Aluminium Corporation of India Ltd., 9, Clive Street, ***Calcutta.***
2. Jeewanlal (1929) Ltd., 101, Clive Street, ***Calcutta.***
3. The Aluminium Manufacturing Co., Ltd., Post Box No. 2245, *Calcutta.*
4. H. Carberry Ltd., 104, Stephen House, Dalhousie Square, ***Calcutta.***
5. The Aluminium Industries Ltd., Main Road, ***Trivandrum*** (Travancore State).
6. Indian Aluminium Co. Ltd., 5, Council House Street, ***Calcutta.***
7. Venesta Ltd., Post Box No. 55, *Calcutta.*
8. The Wolverhampton Works Co. Ltd., Bank of Baroda Building, Apollo Street, Fort, *Bombay.*
9. Rao Bahadur Anant Shiwaji Desai Topiwala, Moti Bazar, ***Bombay,*** 2.
10. Lallubhai Amichand, Post Box No. 2100, ***Bombay.***
11. P. Kothary & Co., 16, Nalini Sett. Road, ***Calcutta.***
12. Non-ferrous Metal Manufacturers' Association, 102-A, Clive Street, ***Calcutta.***

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APPENDIX IV

List of witnesses examined and the dates on which they were examined

Name.	*Date.*
Consumers:	
Mr. P. R. Panikar and Mr. B. V. D. Menon representing Messrs. Aluminium Industries Ltd., Trivandrum.	9th May 1946.
Mr. G. R. Waters representing Messrs. Venesta Ltd., Kamarhati.	Do.
Producers:	
Mr Kenneth Hall representing Messrs. The Indian Aluminium Co. Ltd. Calcutta.	9th and 10th May 1946.
Colonel Dewan Bahadur G. N. Naidu, O.B.E., Mr. T. R. Mahalingam and Mr. S. C. Jain representing Messrs. The Aluminium Corporation of India Ltd., Calcutta.	10th and 11th May 1946.
Importers:	
Mr. H. K. Shah representing Messrs. Jeewanlal (1929) Ltd., Calcutta.	13th May 1946.

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APPENDIX V

Statement showing aluminium ingot, sheets and circles (a) imported into India, (b) manufactured in India and (c) available for consumption in India since 1935.

Year.	(a) Imports.	(b) Indian production		(c) Total for consumption.
		Indian Aluminium Company.	Aluminium Corporation of India.	
	(Tons)	(Tons)	(Tons)	(Tons)
1935	2,600	..	..	2,600
1936	3,200	..	..	3,200
1937	3,200	..	..	3,200
1938	3,300	..	..	3,300
1939	2,900	..	..	2,900
1940	..	..	..	..
1941	..	..	..	..
1942	20	..	..	20
1943	16	1,272	..	1,288
1944	1,360	1,609	200	3,169
1945	4,572	1,344	900	6,816
1946	10,300	1,800	1,200	13,330
1947-48*	15,500	2,500	2,000	20,000
1948-49*	15,100	2,500	2,400	20,000

* *N.B.*—These are estimates only.

APPENDIX VI

Statement showing the quantity, value and average value per cwt. of imports of aluminium (wrought-sheets) into India since 1936-37.

	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46 (8 months from April to November 1945).
I. Quantity of Imports from—										
(1) U.K. (Cwt. 000)	1·73	2·20	1·85	2·54	2·95	0·46	..	..	Information not available.	Information not available.
(2) Germany ,,	0·19	0·74	0·19	0·74	..	..	..	..	,,	,,
(3) France ,,	..	0·05	0·02	0·61	0·20	..	..	..	,,	,,
(4) Switzerland ,,	0·07	0·04	0·44	0·21	0·21	..	..	..	,,	,,
(5) Japan ,,	0·09	0·20	..	0·13	1·61	..	..	..	,,	,,
(6) U.S.A. ,,	0·08	..	..	0·01	1·82	1·14	0·01	..	,,	,,
(7) Other Countries ,,	0·86	..	0·66	0·35	0·14	..	..	..	,,	,,
Total ,,	2·99*	3·23	3·16	4·59	6·93	1·60	0·01	..	6·00	9·38
II. Value of Imports from—										
(1) U.K. (Rs. lakhs)	1·18	1·47	1·47	2·33	4·22	0·83	..	..	Information not available.	Information not available.
(2) Germany ,,	0·12	0·63	0·15	0·49	..	..	..	..	,,	,,
(3) France ,,	..	0·03	0·02	0·54	0·26	..	..	..	,,	,,
(4) Switzerland ,,	0·04	0·04	0·31	0·26	0·27	..	..	..	,,	,,
(5) Japan ,,	0·57	0·12	..	0·16	2·19	..	..	..	,,	,,
(6) U.S.A. ,,	0·07	..	..	0·01	2·36	1·92	0·14	..	,,	,,
(7) Other countries ,,	0·03	..	0·48	0·21	0·22	..	..	..	,,	,,
Total ,,	1·99*	2·29	2·43	4·00	9·52	2·75	0·14	..	7·09	10·04

*Excluding imports into Burma.

III. Average value per cwt. of imports from—											
(1) U.K.	(Rs. as.)	68	66 9	79 11	92 0	143 0	179 0	1800	..		
(2) Germany	„	64 9	85 11	81 6	65 12	..	..	..	..		
(3) France	„	..	67 14	91 14	87 9	130 2	..	..	..		
(4) Switzerland	„	66 1	101 10	70 15	120 9	127 14	..	..	..		
(5) Japan	„	63 0	61 4	..	125 13	136 2	..	..	..		
(6) U.S.A.	„	86 1	..	..	82 8	129 14	168 0	..	..		
Total Imports	„	66 13	71 1	77 1	87 1	137 6	171 2	..	..	118 3	107 1

Statement showing the quantity, value and average value per cwt. of imports of aluminium (wrought-circles) into India since 1936-37.

	1936-37	1937M38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46 (8 months from April to November 1945).
I. Quantity of imports from—										
(1) U.K. (Cwt. 000)	12·94	17·59	14·39	3·92	..	..	..	..	Information not available.	Information not available.
(2) Canada ,,	0·89	1·58	6·37	1·56	..	..	..	..	,,	,,
(3) Germany ,,	19·59	8·26	6·26	0·78	..	..	..	..	,,	,,
(4) Switzerland ,,	1·36	4·77	3·55	1·83	..	..	..	..	,,	,,
(5) Italy ,,	..	1·09	2·47	1·51	..	..	..	..	,,	,,
(6) Japan ,,	14·23	16·10	4·89	4·12	3·65	..	..	..	,,	,,
(7) U.S.A. ,,	2·27	..	..	..	2·13	..	..	..	,,	,,
(8) Other Countries ,,	0·01	0·36	3·89	3·28	0·67	..	..	..	,,	,,
Total ,,	45·04*	49·75	41·82	17·05	6·45	..	..	..	2·17	14·39
II. Value of imports from—										
(1) U.K. Rs. (lakhs)	9·02	12·95	10·67	3·11	..	..	..	..	Information not available.	Information not available
(2) Canada ,,	0·59	1·21	4·40	1·01	..	..	..	..	,,	,,
(3) Germany ,,	11·71	6·18	4·84	0·60	..	..	..	..	,,	,,
(4) Switzerland ,,	1·22	3·57	2·56	1·21	..	..	..	..	,,	,,
(5) Italy ,,	..	0·82	1·74	1·07	..	..	..	..	,,	,,

(6) Japan	,,	9·64	10·75	3·36	2·84	4·28	..	..	..	,,	,,
(7) U.S.A.	,,	1·41	..	..	..	2·67	..	..	..	,,	,,
(8) Other Countries	,,	..	0·80	2·91	2·89	0·42	..	..	..	,,	,,
Total	,,	29·33*	35·78	30·48	12·23	7·35	..	..	..	2·55	15·20
III. Average value per cwt. of imports from—											
(1) U.K.	(Rs. as.)	69 12	73 10	74 2	79 8	..	..	..	..		
(2) Canada	,,	65 13	76 15	69 1	64 13	..	..	..	..		
(3) Germany	,,	59 13	74 14	77 4	77 0	..	..	..	..		
(4) Switzerland	,,	89 7	74 14	72 0	65 14	..	..	..	..		
(5) Italy	,,	..	75 3	70 10	71 7	74 0	..	..	..		
(6) Japan	,,	68 8	66 12	68 10	68 0	116 10	..	..	..		
(7) U.S.A.	,,	62 0	..	..	..	125 0	..	..	..		
Tota	,,	65 2	71 15	72 14	71 12	113 15	..	..	..	117 5	105 10

*Excluding imports into Burma.

Statement showing the quantity and value of total imports of Aluminium into India since 1936-37.

		1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46 (8 months from April to November 1945.)
I. Quantity of imports from—											
(1) U.K.	Cwt. (000)	17·48	24·86	20·63	9·41	4·70	0·59	..	..	Information not available.	Information not available.
(2) Canada	,,	1·27	1·53	7·32	1·68	2·27	0·70	..	..	,,	,,
(3) Germany	,,	23·52	14·23	10·71	4·19	..	..	..	..	,,	,,
(4) France	,,	0·04	0·57	4·48	4·24	0·34	..	..	..	,,	,,
(5) Switzerland	,,	1·80	5·10	5·08	2·87	0·89	1·01	..	..	,,	,,
(6) Italy	,,	0·03	1·75	2·70	1·59	0·12	..	..	..	,,	,,
(7) Japan	,,	15·51	16·66	5·10	4·47	5·87	0·06	..	..	,,	,,
(8) U.S.A.	,,	2·44	0·09	0·12	0·25	6·85	1·86	0·07	..	,,	,,
(9) Other countries	,,	1·16	1·99	1·76	2·90	5·63	1·19	0·34	..	,,	,,
Total	,,	56·61*	66·83	57·85	31·60	26·67	5·41	0·41	0·32	27·22	65·62
II. Value of imports from—											
(1) U.K.	Rs. (lakhs)	12·96	19·75	16·83	8·42	6·99	1·08	..	..	Information not available.	Information not available.
(2) Canada	,,	0·86	1·22	5·08	1·30	6·53	2·47	..	..	,,	,,
(3) Germany	,,	15·62	12·19	9·97	3·84	..	..	..	..	,,	,,
(4) France	,,	0·05	0·59	3·63	3·42	0·53	..	..	..	,,	,,

(5) Switzerland	,,	1·70	4·02	4·11	2·43	1·76	0·02	..	..	,,	,,
(6) Italy	,,	0·04	1·62	1·99	1·28	0·21	..	..	..	,,	,,
(7) Japan	,,	10·09	11·35	3·71	3·34	7·43	0·12	..	..	,,	,,
(8) U.S.A.	,,	1·57	0·12	0·12	0.34	10·60	3·64	0·21	0·02	,,	,,
(9) Other countries	,,	0·54	1·84	0·86	1·24	3·62	1·67	0·31	0·39	,,	,,
Total	,,	39·36*	52·70	46·30	25·56	37·67	9·01	0·52	0·41	24·19	51·20

*Excluding imports into Burma.

Statement showing the quantity, value and average value per cwt. of imports of Aluminium (wrought other manufacturers) into India since 1936-37.

		1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46 (8 months from April to November 1945).
I. Quantity of imports from—											
(1) U.K.	Cwt. (000)	2·76	5·01	4·34	2·91	1·71	0·12	..	..	Information not available	Information not available
(2) Ceylon	"	0·41	0·21	0·40	0·55	1·12	0·19	0·17	0·32	"	"
(3) Canada	"	0·32	..	0·28	0·12	2·27	0·70	..	..	"	"
(4) Germany ..	"	3·60	5·23	4·26	2.66	..	..	..	..	"	"
(5) France	"	0·04	0·52	0·75	0·67	0·14	..	..	..	"	"
(6) Switzerland	"	0·37	0·30	1·09	0·63	0·67	0·01	..	..	"	"
(7) Japan	"	0·37	0·35	0·21	0·17	0·61	0·05	..	..	"	"
(8) U.S.A.	"	0·09	0·09	0·12	0·24	2·60	0·71	0·04	..	"	"
(9) Other countries	"	0·78	2·09	1·38	1·43	2·91	0·71	0·17	..	"	"
Total	"	8·48*	13·80	12·83	9·58	12·03	2·49	0·38	0·32	0·31	0·39
II. Value of imports from—											
(1) U.K.	Rs. (lakhs)	2·73	5·29	4·66	2·95	2·74	0·25	..	..	Information not available	Information not available
(2) Ceylon	"	0·07	0·03	0·05	0·06	0·24	0·10	0·15	0·38	"	"
(3) Canada	"	0·23	..	0·20	0·28	6·53	3·47	..	..	"	"
(4) Germany	"	3·76	6·10	4·98	2·76	..	..	..	..	"	"

(5) France	„	0·05	0·56	0·87	0·71	0·27	..	..	..	„	„
(6) Switzerland	„	0·44	0·42	1·25	0·97	1·49	0·02	..	..	„	„
(7) Japan	„	0·48	0·48	0·35	0·34	0·98	0·13	..	..	„	„
(8) U.S.A.	„	0·09	0·12	0·12	0·34	5·57	1·72	0·06	0·02	„	„
(9) Other Countries	„	0·51	1·59	0·88	0·64	1·84	0·50	0·16	0·01	„	„
Total	„	7·96*	14·59	13·36	9·04	19·66	5·19	0·37	0·41	0·53	0·49
III. Average value per cwt of imports from—											
(1) U.K.	Rs. as.	98 15	105 10	107 5	101 5	160 7	203 14	171 0	25 0		
(2) Ceylon	„	17 15	15 14	11 6	11 7	21 10	54 13	91 12	122 1		
(3) Canada	„	71 11	73 0	72 8	234 1	288 0	..	..	..		
(4) Germany	„	101 8	116 10	116 15	103 5	..	..	..	..		
(5) France	„	145 8	106 12	116 9	105 14	192 11	161 0	..	..		
(6) Switzerland	„	116 10	141 7	114 6	117 2	221 9	187 6	116 0	..		
(7) Japan	„	127 15	134 4	171 0	200 0	160 6	248 12	..	..		
(8) U.S.A.	„	104 11	137 8	103 11	138 7	214 11	240 6	168 9	573 12	..	
Total imports	„	93 14	105 12	104 2	94 6	163 6	208 11	97 4	128 7	172 5	124 7

*Excluding imports into Burma.

Statement showing the quantity, value and average value per cwt. of Aluminium (unwrought-ingots, blocks, bars, etc.) into India since 1936-37.

	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46 (8 months from April to November 1945.)
I. Quantity of imports from—										
(1) Burma Cwt. (000)	..	..	..	0·33	1·19	1·31	..	..	Information not available	Information not available
(2) Other Br. Possns. ,,	0·05	0·06	0·05	0·04	0·07	..	..	..	,,	,,
(3) Foreign Countries ,,	0·06	..	..	..	..	..	0·02	..	,,	,,
Total ,,	0·11	0·06	0·05	0·37	1·26	1·31	0·02	..	18·74	41·46
II. Value of imports from—										
(1) Burma Rs. (000)	..	..	..	27·07	110·03	107·24	..	..	Information not available	Information not available
(2) Other Br. Possns. ,,	3·21	3·38	2·82	2.46	4·19	..	..	0·05	,,	,,
(3) Foreign countries	4·39	..	0·04	..	..	..	1·23	..	,,	,,
Total ,,	7·60	3·38	2·86	29.53	114·23	107·24	1·23	0·05	1402·87	2547·11
III. Average value per cwt. of imports from—										
(1) Burma Rs. as.	..	..	..	82 4	92 5	81 11	..	..		
(2) Other Br. Possns. ,,	65 9	55 7	55 6	55 14	64 8	..	..	22 8		
(3) Foreign Countries ,,	74 6	..	..	..	..	..	68 4	..		
Total imports ,,	70 6	55 7	56 2	79 3	90 14	81 11	68 4	22 8	74 14	61 7

APPENDIX VII

List of aluminium utensils fabricators who were assisted by releases aluminium ingots, sheets and circles by the Department of Industries and Civil Supplies for the purpose of the Aluminium Utensils Control Order.

1. Messrs. Jeewanlal (1929) Ltd., 101, Clive Street, Calcutta.
2. Messrs. The Aluminium Mfg. Co. Ltd., 4, Fairlie Place, P. B. No. 2245, Calcutta.
3. Messrs. Jamnadas Bros. 69, Canning Street, Calcutta.
4. Messrs. Bengal Metal Works Ltd., 117|8, Chittaranjan Avenue (South), Calcutta.
5. Messrs. Shankar Aluminium Factory, Vidyapitha Road, Benares Cantt.
6. Messrs. Mysore Premier Metal Factory, 124, Mint Street, Madras.
7. Messrs. Lallubhai Amichand, 554, Kansara Chawl, Bombay.
8. Messrs. Anant Shivaji Desai, Moti Bazar, Bombay 2.
9. Messrs. The Wolverhampton Works Co. Ltd., Bank of Baroda Building, Bombay.
10. Messrs. Pitamberdas Lallubhai & Co., 86, Kansara Chawl, Kalbadevi Road, Bombay.
11. Messrs. Kamani Metal Refinery and Metal Works, Devkaran Nanjee Building, 17-B., Elphinstone Circle, Bombay.
12. Messrs. W. Leslic & Co. Ltd., Magazine Street, Darukhana, Bombay.
13. Messrs. Gulamally Abdullhussein & Co., 66-68, Narayan Dhuru Street, P. B. No. 3092, Bombay 3.
14. Messrs. Jagjiwandas Narotamdas, 110-112, North Brook Street, Bombay.
15. Messrs. Devi Dayal & Sons, Tulsiram Gupta Mills Estate, Magazine Street, Darukhana, Bombay No. 10.
16. Messrs. The English Aluminium Mart, 63-65, Kansara Chawl, Kalbadevi Road, Bombay.
17. Messrs. Dhiraj Metal Works, P. Box No. 10, Rajkot (Kathiawar).

18. Messrs. Ram Kishan Metal Works, Batala.

19. Messrs. Ghasita Ram Metal Works, Grand Trunk Road, Batala.

20. Messrs. Malik Brassware Mfrs., Faizbagh, Grand Trunk Road, Lahore.

21. Messrs. Jagannath Diwanchand Jaini, Near Eminabadi Gate, Gujranwala.

22. Messrs. The National Metal Works (Regd.), Gujranwala.

23. Messrs. Jain Brothers Ltd., Kaserabazar, Gujranwala.

24. Messrs. Mohd. Din Mohd. Abdulla, Mansara Bazar, Gujranwala.

25. Messrs. Ballisingh Bhagwansingh, Bazar Kasera, Amritsar.

6. Messrs. Diwanshah & Sons Ltd., Gujranwala.

27. Messrs. Sardar Metal Works, Sheikhupura Gate, Gujranwala.

28. Messrs. The Bharat Metal Works, Gujranwala.

29. Messrs. Devi Dayal & Sons, Sheikhupura Gate, Gujranwala.

30. Messrs. Cannon Metal Works, Outside Khiali Gate, Gujranwala.

31. Messrs. M. Shiraj Din Mohd. Shaffi, Gujranwala (Punjab).

32. Messrs. Popular Aluminium Factory, Gujranwala.

33. Messrs. Aluminium Corporation of India, Kamla Tower, Cawnpore.

34. Messrs. Bombay Brass & Metal Works, Panjra Pole, 2nd Street, Bombay.

35. Messrs. Naran Lala Kansara, Navsari.

36. Messrs. Agrawal Metal Works, Rewari.

37. Messrs. The Modern Metal Works, Gujranwala.

38. Messrs. Natwarlal & Co., Thakurdwar, Dhobiwadi, Bombay.

39. Messrs. Ratsons Metal Industries, Latouche Road, Post Box No. 23, Cawnpore.

40. Messrs. Hukumchand Ishwardas, 167, Vetal Peth, Poona 2.

41. Messrs. Oriental Metal Pressing Works, Opp. Mahaluxmi Rly. Station. Bombay No. 11.

42. Messrs. The Acme Mfg. Co. Ltd., Construction House, Ballard Estate, Bombay.

43. Messrs. American Oriental Trading Co., Post Box No. 2521, Calcutta.

44. Messrs. Chanana Aluminium & Wares Works, Gujranwala.

45. Messrs. The Kathiawar Metal Works, Sihor, Kathiawar.

46. Messrs. H. A. Brothers, Lahore.

47. Messrs. Madan Mohan Metal Industries, Dunddo Building, Kingsway, Secunderabad.

48 Messrs Utensils Mfg. Co. Ltd., G. T. Road, Gujranwala.

49. Messrs. Aluminium Castware Mfrs. Association, Rajahmundry

50 Messrs. Patent Tiffin Carriers Sanghvi Co., 110, Shivaji Nagar, Poona 5.

सत्यमेव जयते

APPENDIX VIII

Statement showing the subsidy payable to the home producers.

Year of protection.	Selling price of ingot for consumer ex-works Rs. per ton.	Fair selling price of ingot of Indian Aluminium Company Rs. per ton	Rate of subsidy payable to Indian Aluminium Company Rs. per ton.	Expected production of Indian Aluminium Company Tons.	Estimated amount of subsidy payable to the Company Rs. Lakhs.	Fair selling price of ingot of Aluminium Corpn. of India. Rs. per ton	Rate of subsidy payable to Aluminium Corpn. Rs. per ton.	Expected production of Corporation. Tons.	Estimated amount of subsidy payable to Corpn. Rs. Lakhs	Total estimated amount of subsidy payable to Company and Corporation Rs. Lakhs.	Additional revenue expected from increase of import duty. Rs. Lakhs
1	2	3	4	5	6	7	8	9	10	11	12
1946-47 (October to March 1947). ..	1,600	2,417	817	1,000	8·17	2,448	848	810	6·87	15·04	15·00
1947-48	1,600	2,186	586	2,500	14·70	2,176	576	2,000	11·52	26·22	46·50
1948-49 (End of March)	1,600	1,900	300	2,500	7·50	1,868	268	2,400	6·43	13·93	45·30
				6,000	30·37			5,210	24·82	55·19	106·80

Note.—(1) Incidence of subsidy per ton of ingot for the whole period.

	Rs.
(a) Indian Aluminium Co.	506
(b) Aluminium Corporation of India	476
(c) Average for industry	491

(2) Balance left from additional revenue after paying the subsidy Rs. 51·61 Lakhs.

(3) If the Selling price were assumed to Rs. 1,500 per ton of ingot the subsidy payable and financial result will be as follows:—

Producer ..	1946-47	1947-48.	1948-49.	Total
		Rs. Lakhs.		
(a) Indian Aluminium Company ..	9·17	17·15	10·00	36·32
(b) Aluminium Corporation of India ..	7·68	13·52	8·83	30·03
(c) *Total*	16·85	30·67	18·83	66·35
(d) Additional revenue	15·00	46·50	45·30	106·80
(e) The balance left from additional revenue after payment of subsidy.	—1·85	+15·83	+26·47	+40·45

(4) Selling price of Rs. 1,600 per ton = Re. 0-11-5 per lb.
Selling price of Rs. 1,500 per ton = Re. 0-10-9 per lb.

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